

and the comparison of the national bank's or Federal savings association's model outputs with relevant internal and external data sources or estimation techniques; and

(iii) An outcomes analysis process that includes backtesting. For internal models used to calculate the VaR-based measure, this process must include a comparison of the changes in the national bank's or Federal savings association's portfolio value that would have occurred were end-of-day positions to remain unchanged (therefore, excluding fees, commissions, reserves, net interest income, and intraday trading) with VaR-based measures during a sample period not used in model development.

(3) The national bank or Federal savings association must stress test the market risk of its covered positions at a frequency appropriate to each portfolio, and in no case less frequently than quarterly. The stress tests must take into account concentration risk (including but not limited to concentrations in single issuers, industries, sectors, or markets), illiquidity under stressed market conditions, and risks arising from the national bank's or Federal savings association's trading activities that may not be adequately captured in its internal models.

(4) The national bank or Federal savings association must have an internal audit function independent of business-line management that at least annually assesses the effectiveness of the controls supporting the national bank's or Federal savings association's market risk measurement systems, including the activities of the business trading units and independent risk control unit, compliance with policies and procedures, and calculation of the national bank's or Federal savings association's measures for market risk under this subpart. At least annually, the internal audit function must report its findings to the national bank's or Federal savings association's board of directors (or a committee thereof).

(e) *Internal assessment of capital adequacy.* The national bank or Federal savings association must have a rigorous process for assessing its overall capital adequacy in relation to its mar-

ket risk. The assessment must take into account risks that may not be captured fully in the VaR-based measure, including concentration and liquidity risk under stressed market conditions.

(f) *Documentation.* The national bank or Federal savings association must adequately document all material aspects of its internal models, management and valuation of covered positions, control, oversight, validation and review processes and results, and internal assessment of capital adequacy.

§ 3.204 Measure for market risk.

(a) *General requirement.* (1) A national bank or Federal savings association must calculate its standardized measure for market risk by following the steps described in paragraph (a)(2) of this section. An advanced approaches national bank or Federal savings association also must calculate an advanced measure for market risk by following the steps in paragraph (a)(2) of this section.

(2) *Measure for market risk.* A national bank or Federal savings association must calculate the standardized measure for market risk, which equals the sum of the VaR-based capital requirement, stressed VaR-based capital requirement, specific risk add-ons, incremental risk capital requirement, comprehensive risk capital requirement, and capital requirement for *de minimis* exposures all as defined under this paragraph (a)(2), (except, that the national bank or Federal savings association may not use the SFA in section 210(b)(2)(vii)(B) of this subpart for purposes of this calculation)[, plus any additional capital requirement established by the OCC]. An advanced approaches national bank or Federal savings association that has completed the parallel run process and that has received notifications from the OCC pursuant to § 3.121(d) also must calculate the advanced measure for market risk, which equals the sum of the VaR-based capital requirement, stressed VaR-based capital requirement, specific risk add-ons, incremental risk capital requirement, comprehensive risk capital requirement, and capital requirement for *de minimis*

exposures as defined under this paragraph (a)(2) [, plus any additional capital requirement established by the OCC].

(i) *VaR-based capital requirement.* A national bank's or Federal savings association's VaR-based capital requirement equals the greater of:

(A) The previous day's VaR-based measure as calculated under § 3.205; or

(B) The average of the daily VaR-based measures as calculated under § 3.205 for each of the preceding 60 business days multiplied by three, except as provided in paragraph (b) of this section.

(ii) *Stressed VaR-based capital requirement.* A national bank's or Federal savings association's stressed VaR-based capital requirement equals the greater of:

(A) The most recent stressed VaR-based measure as calculated under § 3.206; or

(B) The average of the stressed VaR-based measures as calculated under § 3.206 for each of the preceding 12 weeks multiplied by three, except as provided in paragraph (b) of this section.

(iii) *Specific risk add-ons.* A national bank's or Federal savings association's specific risk add-ons equal any specific risk add-ons that are required under § 3.207 and are calculated in accordance with § 3.210.

(iv) *Incremental risk capital requirement.* A national bank's or Federal savings association's incremental risk capital requirement equals any incremental risk capital requirement as calculated under section 208 of this subpart.

(v) *Comprehensive risk capital requirement.* A national bank's or Federal savings association's comprehensive risk capital requirement equals any comprehensive risk capital requirement as calculated under section 209 of this subpart.

(vi) *Capital requirement for de minimis exposures.* A national bank's or Federal savings association's capital requirement for *de minimis* exposures equals:

(A) The absolute value of the fair value of those *de minimis* exposures that are not captured in the national bank's or Federal savings association's

VaR-based measure or under paragraph (a)(2)(vi)(B) of this section; and

(B) With the prior written approval of the OCC, the capital requirement for any *de minimis* exposures using alternative techniques that appropriately measure the market risk associated with those exposures.

(b) *Backtesting.* A national bank or Federal savings association must compare each of its most recent 250 business days' trading losses (excluding fees, commissions, reserves, net interest income, and intraday trading) with the corresponding daily VaR-based measures calibrated to a one-day holding period and at a one-tail, 99.0 percent confidence level. A national bank or Federal savings association must begin backtesting as required by this paragraph (b) no later than one year after the later of January 1, 2014 and the date on which the national bank or Federal savings association becomes subject to this subpart. In the interim, consistent with safety and soundness principles, a national bank or Federal savings association subject to this subpart as of January 1, 2014 should continue to follow backtesting procedures in accordance with the OCC's supervisory expectations.

(1) Once each quarter, the national bank or Federal savings association must identify the number of exceptions (that is, the number of business days for which the actual daily net trading loss, if any, exceeds the corresponding daily VaR-based measure) that have occurred over the preceding 250 business days.

(2) A national bank or Federal savings association must use the multiplication factor in Table 1 to § 3.204 that corresponds to the number of exceptions identified in paragraph (b)(1) of this section to determine its VaR-based capital requirement for market risk under paragraph (a)(2)(i) of this section and to determine its stressed VaR-based capital requirement for market risk under paragraph (a)(2)(ii) of this section until it obtains the next quarter's backtesting results, unless the OCC notifies the national bank or Federal savings association in writing that a different adjustment or other action is appropriate.

TABLE 1 TO § 3.204—MULTIPLICATION FACTORS
BASED ON RESULTS OF BACKTESTING

Number of exceptions	Multiplication factor
4 or fewer	3.00
5	3.40
6	3.50
7	3.65
8	3.75
9	3.85
10 or more	4.00

§ 3.205 VaR-based measure.

(a) *General requirement.* A national bank or Federal savings association must use one or more internal models to calculate daily a VaR-based measure of the general market risk of all covered positions. The daily VaR-based measure also may reflect the national bank's or Federal savings association's specific risk for one or more portfolios of debt and equity positions, if the internal models meet the requirements of paragraph (b)(1) of § 3.207. The daily VaR-based measure must also reflect the national bank's or Federal savings association's specific risk for any portfolio of correlation trading positions that is modeled under § 3.209. A national bank or Federal savings association may elect to include term repo-style transactions in its VaR-based measure, provided that the national bank or Federal savings association includes all such term repo-style transactions consistently over time.

(1) The national bank's or Federal savings association's internal models for calculating its VaR-based measure must use risk factors sufficient to measure the market risk inherent in all covered positions. The market risk categories must include, as appropriate, interest rate risk, credit spread risk, equity price risk, foreign exchange risk, and commodity price risk. For material positions in the major currencies and markets, modeling techniques must incorporate enough segments of the yield curve—in no case less than six—to capture differences in volatility and less than perfect correlation of rates along the yield curve.

(2) The VaR-based measure may incorporate empirical correlations within and across risk categories, provided the national bank or Federal savings association validates and demonstrates

the reasonableness of its process for measuring correlations. If the VaR-based measure does not incorporate empirical correlations across risk categories, the national bank or Federal savings association must add the separate measures from its internal models used to calculate the VaR-based measure for the appropriate market risk categories (interest rate risk, credit spread risk, equity price risk, foreign exchange rate risk, and/or commodity price risk) to determine its aggregate VaR-based measure.

(3) The VaR-based measure must include the risks arising from the non-linear price characteristics of options positions or positions with embedded optionality and the sensitivity of the fair value of the positions to changes in the volatility of the underlying rates, prices, or other material risk factors. A national bank or Federal savings association with a large or complex options portfolio must measure the volatility of options positions or positions with embedded optionality by different maturities and/or strike prices, where material.

(4) The national bank or Federal savings association must be able to justify to the satisfaction of the OCC the omission of any risk factors from the calculation of its VaR-based measure that the national bank or Federal savings association uses in its pricing models.

(5) The national bank or Federal savings association must demonstrate to the satisfaction of the OCC the appropriateness of any proxies used to capture the risks of the national bank's or Federal savings association's actual positions for which such proxies are used.

(b) *Quantitative requirements for VaR-based measure.* (1) The VaR-based measure must be calculated on a daily basis using a one-tail, 99.0 percent confidence level, and a holding period equivalent to a 10-business-day movement in underlying risk factors, such as rates, spreads, and prices. To calculate VaR-based measures using a 10-business-day holding period, the national bank or Federal savings association may calculate 10-business-day measures directly or may convert VaR-based measures using holding periods other than